



OCTOBER 21, 1985

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ENGINEERS CONSTRUCTION INSPECTION REPORT



DEPARTMENT OF STATE LANDS



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Engineers Construction Inspection Report

for

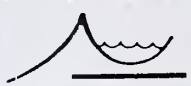
Ben Mundie, Geologist
Department of State Lands
1625 Eleventh Avenue
Capitol Station
Helena, MT 59620

by

HYDROMETRICS
2727 Airport Road
Helena, MT 59620
406/443-4150

PLEASE RETURN

October 21, 1985



October 29, 1985

Ben Mundie, Geologist
Department of State Lands
1625 Eleventh Avenue
Capitol Station
Helena, MT 59620

Dear Ben,

Enclosed for your consideration are two copies of the engineer's construction report for work on the Original, Emma and Mary Louise shafts in uptown Butte. Included in the report are photos of the work and the engineer's field notes.

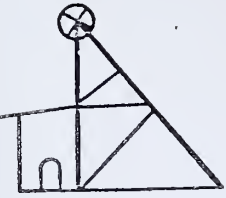
I was in Butte on October 2, 1985, and looked at each of the sites. I believe Gilman has done an excellent job.

Sincerely,

Robert D. Braico, P. E.
Civil/Sanitary Engineer

RDB:jy

Enclosures



PIPER & ASSOCIATES, INC.
Mining Industry Consultants
2940 Edwards St., Butte, Montana 59701
2312 Harrison Ave., Butte, Montana 59701
(406) 494-5369 or (406) 782-5650

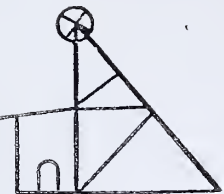
DAILY LOG ON THE
RECLAMATION OF ORIGINAL, EMMA & MARY LOUISE MINE SHAFTS
BY
GILMAN EXCAVATING, INC.
ENGINEER: R. D. PIPER, PIPER & ASSOCIATES, INC.

- 9/16/85 Original Shaft
Cleaned area around shaft - removed old turn sheets,
misc. timber, moved cages.
Moved equipment to the job.
- 9/17/85 Original Shaft
Removed change-over guides.
Removed fill piles & recovered shaft.
Cut guides at upper deck - cutting torch.
Broke them off at the junction of the change-over and
the hard wood guides about 3 feet below surface.
Hauled gravel in for the base for the concrete panels.
Removed the timber-hoist from the south side of the
shaft.
- 9/18/85 Original Shaft
Excavated trenches for gravel support.
Placed, leveled and compacted gravel - ready for panel
placement.
Placed timber hoist back on platform.
- 9/19/85 Uncovered Emma Shaft using backhoe.
Chipped off top portion of two headframe piers - used
pavement breaker.
Dug shaft area down to grade.



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Leveled off area - pushed material to southwest corner.
Dug trenches for gravel.
Placed gravel and compacted.

9/20/85 Unloaded and placed 12 panels at the Emma.
Partially filled around the panels.

9/21/85 No work.

9/22/85 No work.

9/23/85 No work. Gilman getting release to work on the Mary Louise Shaft from the School Board.

9/24/85 No work.

9/25/85 Unloaded and placed the two remaining panels at the Emma.

Unloaded and placed 10 panels at the Original.

Unloaded and stacked 11 panels at the Mary Louise Shaft site.

Cleared Mary Louise shaft area of debris, which included several concrete fence post bases, and hauled away from the project.

Leveled area and prepared for trenches.

9/26/85 Dug trenches.

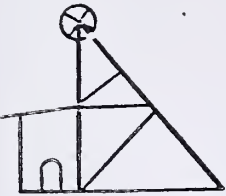
Placed and compacted gravel.

Unloaded three remaining panels.

Placed all 13 panels.

Hauled excess muck to the Emma.

9/27/85 No work.



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9/28/85 Finished dressing the fill edges around the panels
on both the Emma and Mary Louise.

9/29/85 No work.

9/30/85 No work.

10/01/85 No work.

10/02/85 No work.

10/03/85 No work.

10/04/85 No work.

10/05/85 Original Shaft
Cut-off and welded folding guides back in place.
Finished filling and compacting around the panels.
Job completed.

SIGNED

R. D. Piper

R. D. PIPER, P.E., L.S.
PRESIDENT

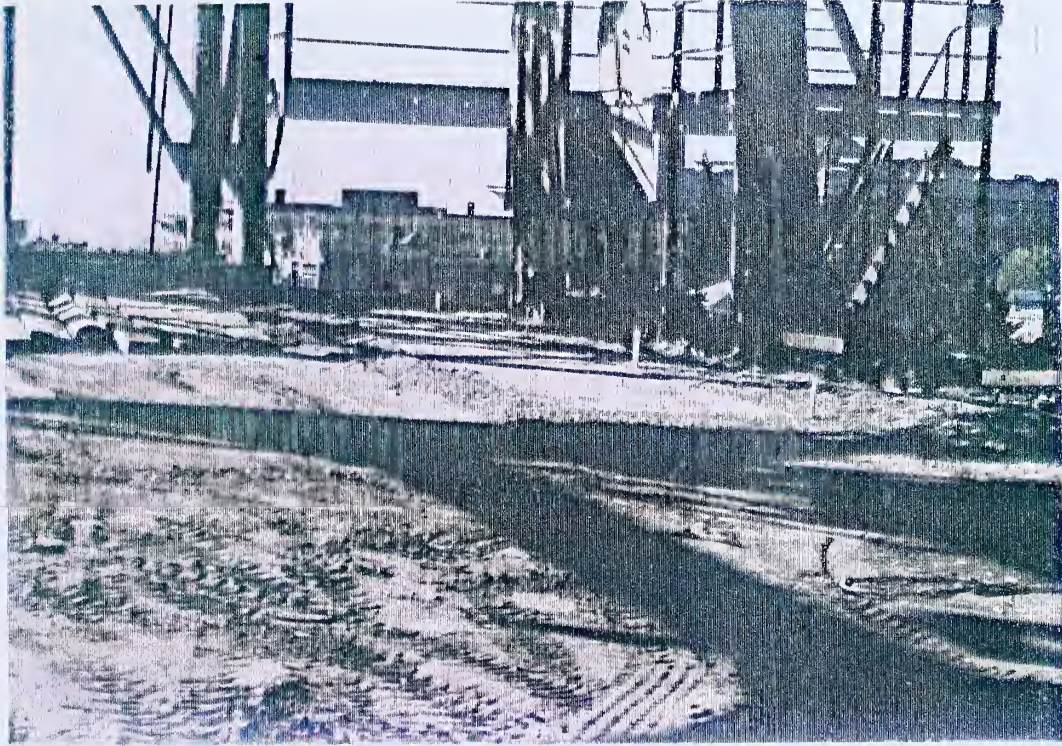
RDP:ses



9/16/85 - Original Mine Shaft opening after being uncovered and debris cleared away.



9/17/85 - Installing temporary bulkhead over Original Shaft.



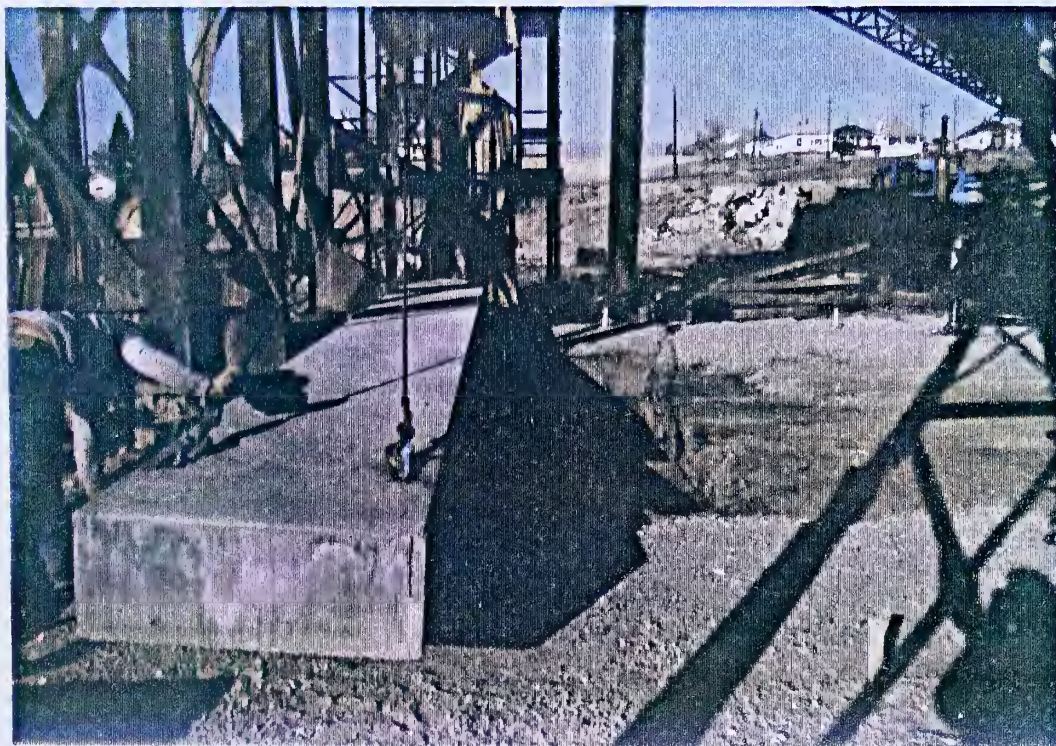
9/17/85 - Original Shaft - Gravel support pad for precast concrete channel section.



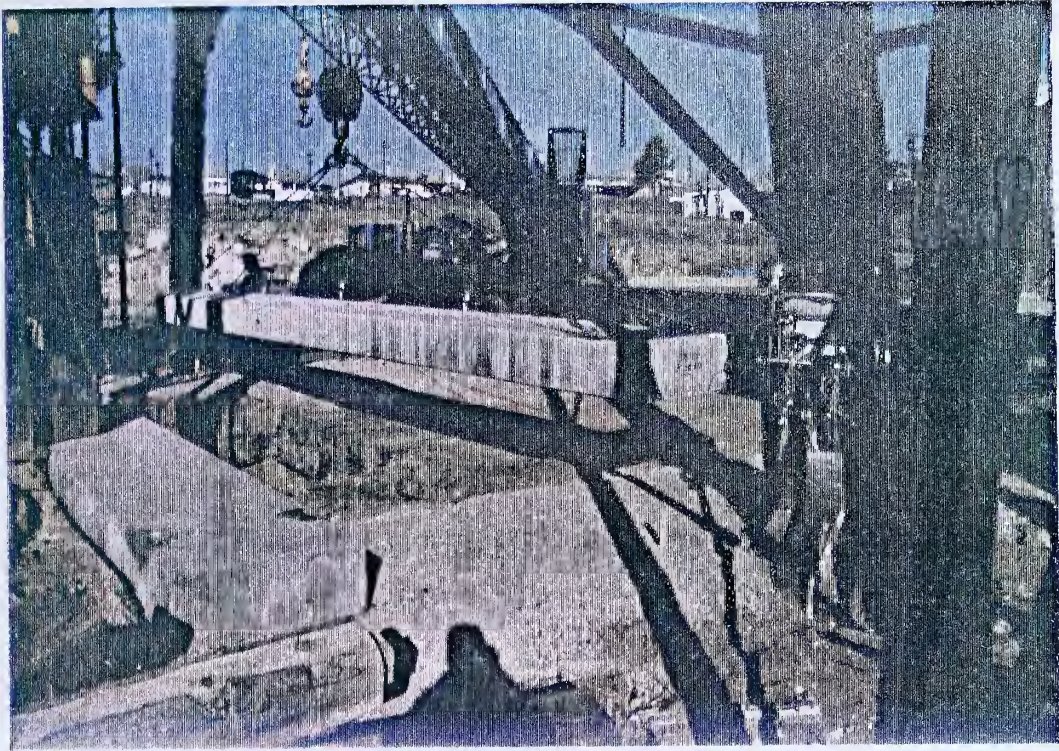
9/25/85 - Uncovering Original Shaft preparatory to install precast concrete channel sections.



9/25/85 - Original Shaft - Unloading precast sections.



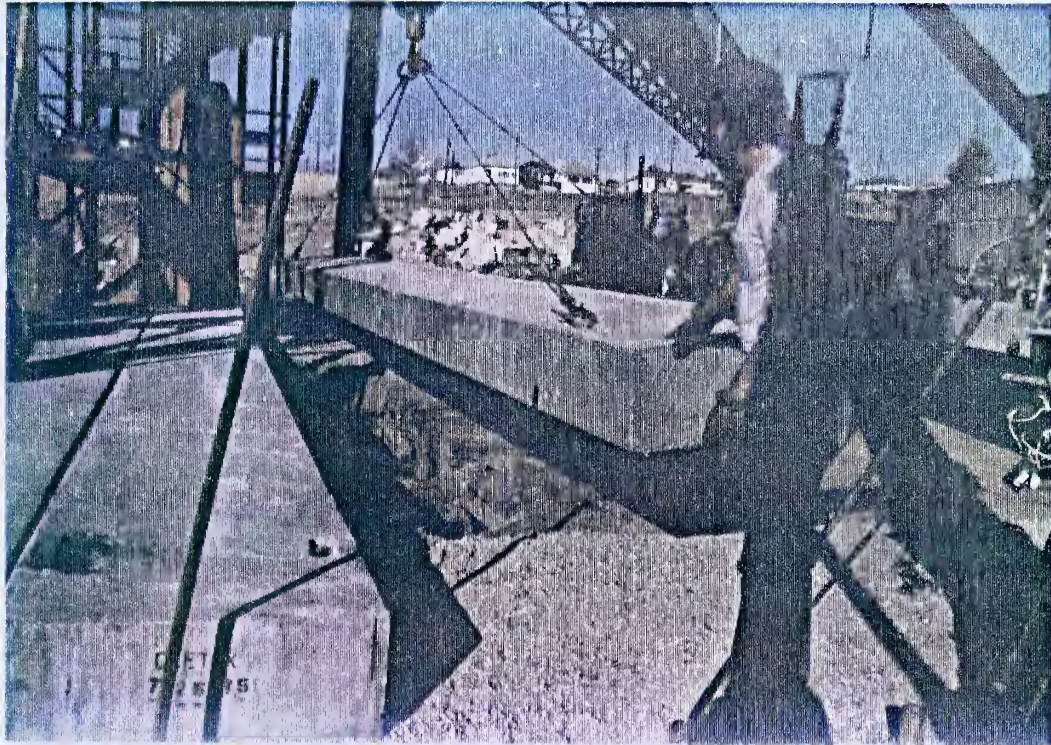
9/25/85 - Original Shaft - Installation of first precast section.



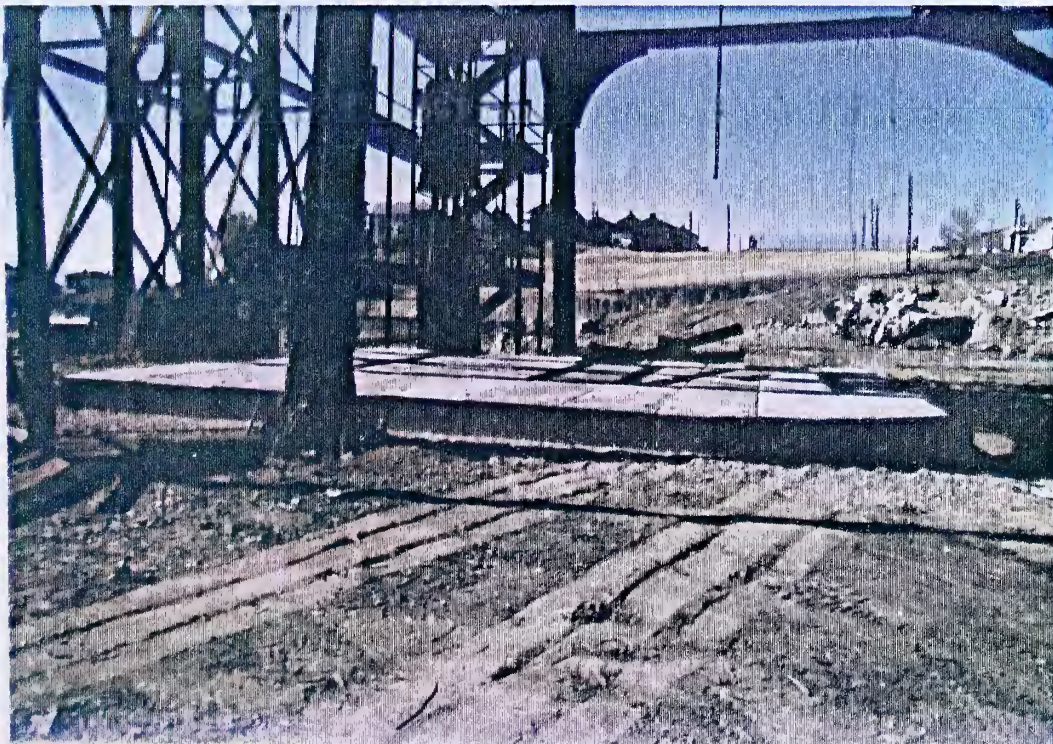
9/25/85 - Original Shaft - Installation of second precast section.



9/25/85 - Original Shaft - Installation of second precast section.



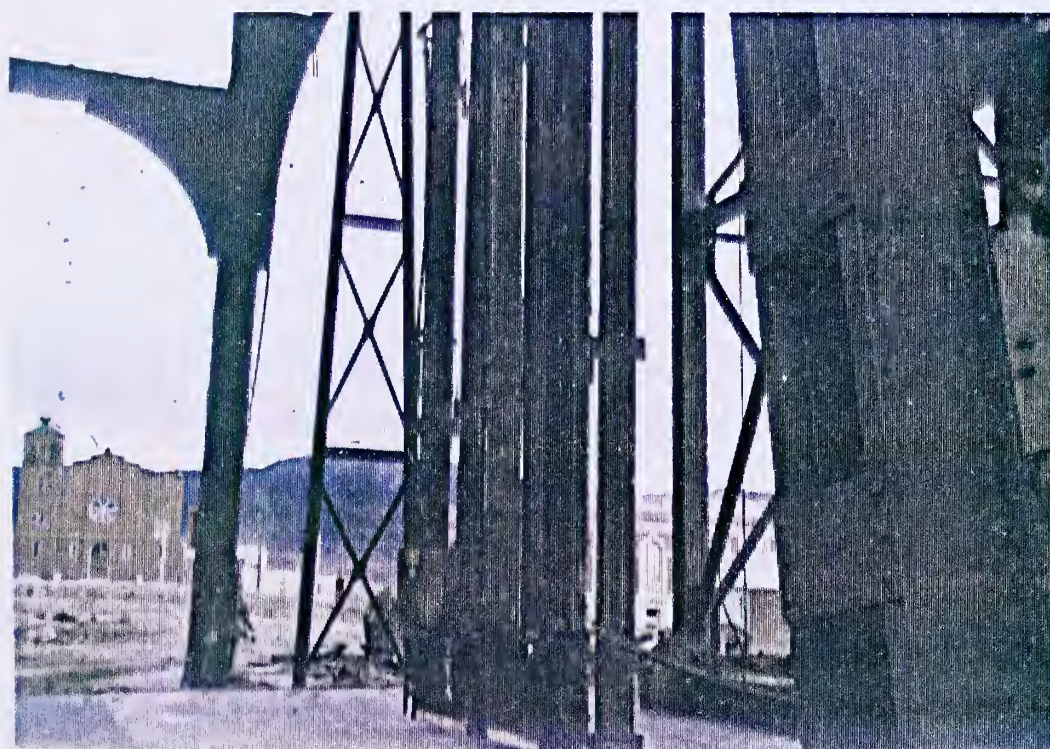
9/25/85 - Original Shaft - Installation of third panel.



9/25/85 - Original Shaft - All panels in place.



10/5/85 - Original Shaft - Guide reinstallation complete.



10/5/85 - Original Shaft - Guide reinstallation complete.



9/19/85 - Emma Shaft - Excavation



9/19/85 - Emma Shaft - Excavation



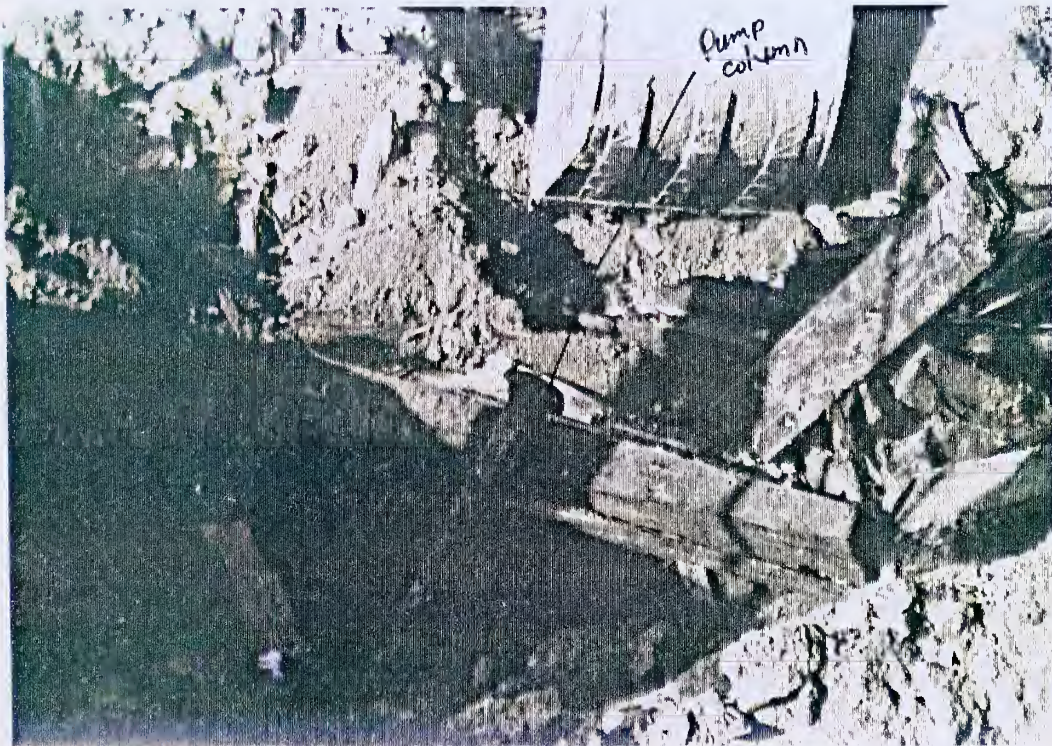
9/19/85 - Emma Shaft - Excavation



9/19/85 - Emma Shaft - Excavation



9/19/85 - Emma Shaft - Excavation



9/19/85 - Emma Shaft - Excavation



9/20/85 - Emma Shaft - Removal of portion of headframe footing.



9/20/85 - Emma Shaft - Constructing southwest gravel support pad.



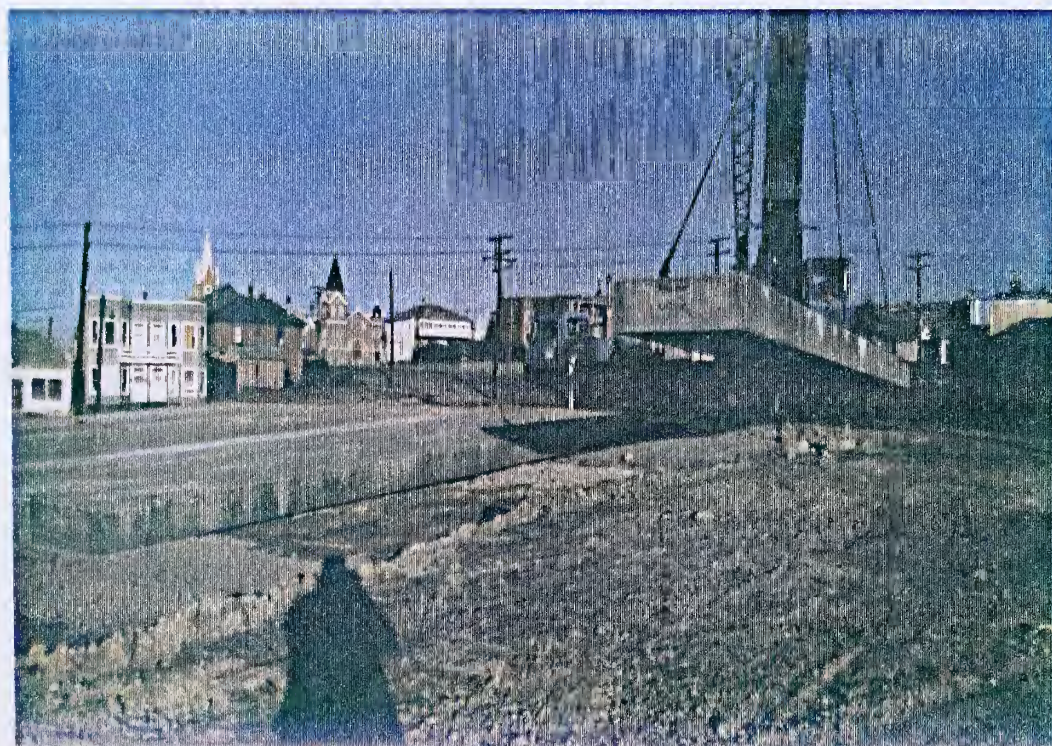
9/20/85 - Emma Shaft - Constructing northeast gravel support pad.



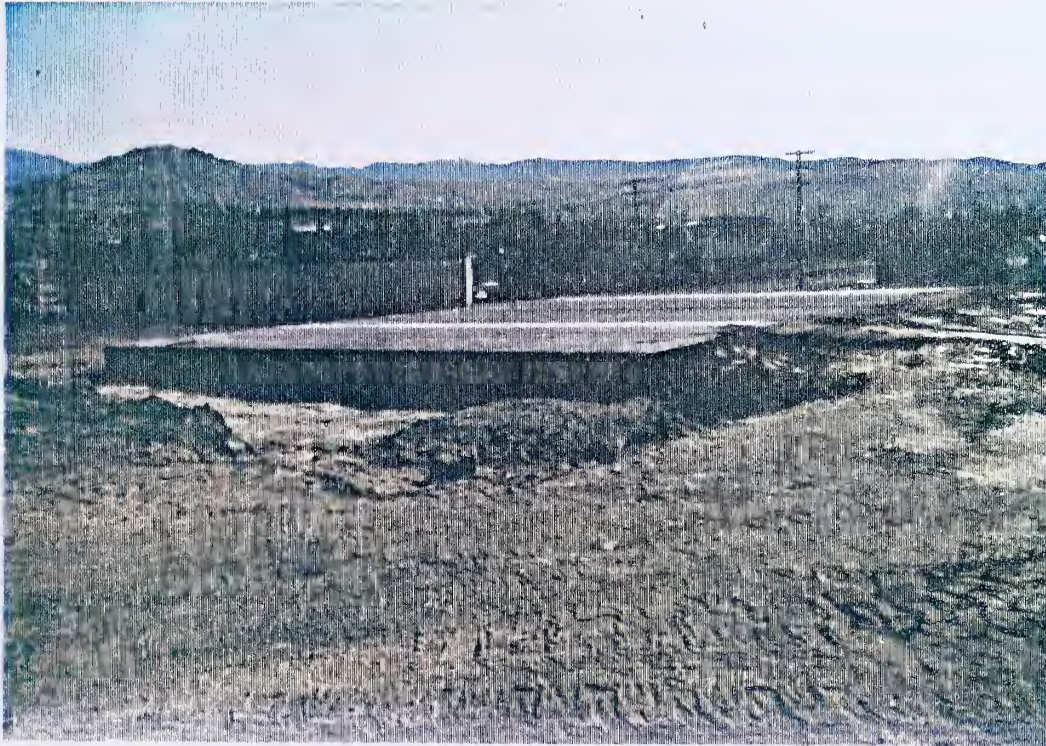
9/20/85 - Emma Shaft - Unloading panels.



9/20/85 - Emma Shaft - Unloading and placing panels.



9/20/85 - Emma Shaft - Placing panels.

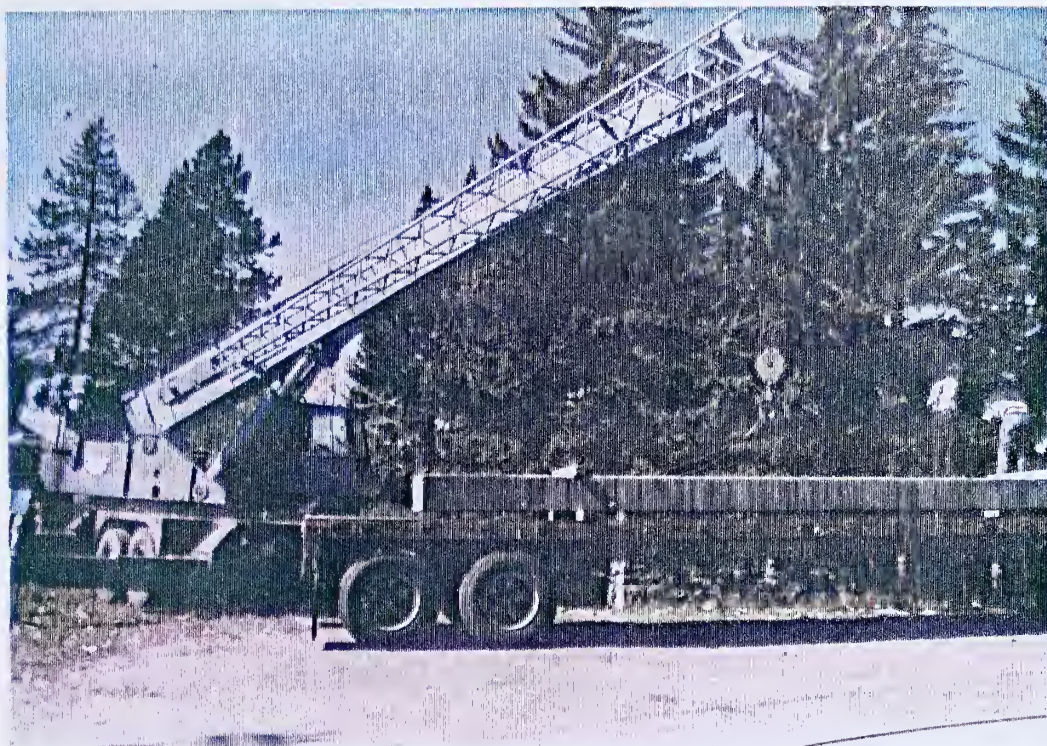


9/20/85 - Emma Shaft - 10 panels installed.



9/23/85 - Emma Shaft - Panels backfilled; job completed.

MARY LOUISE SHAFT



9/25/85 - Mary Louise Shaft - Unloading panels.



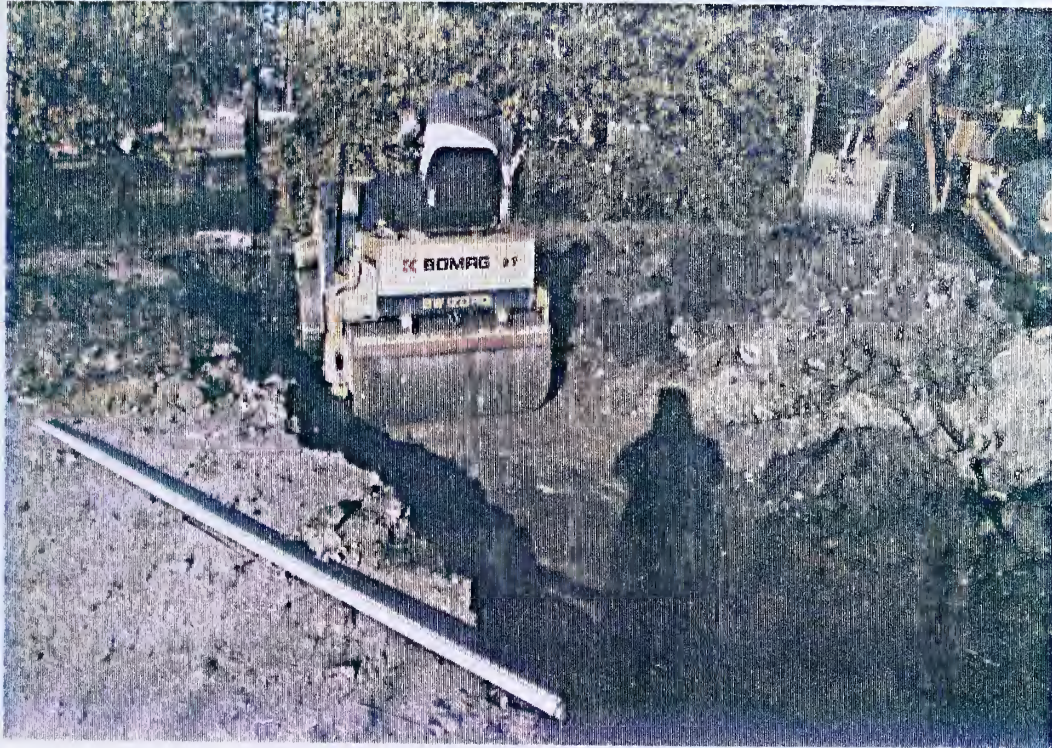
9/25/85 - Mary Louise Shaft - Temporary panel storage.



9/25/85 - Mary Louise Shaft - Site preparation.



9/25/85 - Mary Louise Shaft - Site preparation.



9/25/85 - Mary Louise Shaft - Subgrade compaction for gravel support pads.



9/25/85 - Mary Louise Shaft - Subgrade compaction for gravel support pads.



9/26/85 - Mary Louise Shaft - Gravel support pad construction.



9/26/85 - Mary Louise Shaft - Concrete panel installation.



9/26/85 - Mary Louise Shaft - Concrete panel placement.

AML

(1)

9/15/85

Bill Field and I went to each site to show him what we wanted. spent about 1 hour on each site.

Original will cut guide - change over just blow pull-off deck.

9/16/85

Bill Field & 2 men

cleared up.

Moved cage out of way.

Moved old timber (underground) out of way.

Removed old fidon sheets, put them west of shaft. Cleared fill material from shaft - ^{rolled} to west of shaft.

Brought roller & backhoe from Glenora yard to original.

Brought crane (50Tm) to job at original.

9/17/85

Bill Field & 2 men

8:00 - cleared rest of fill around shaft.

12:00

9:00 Out off guide at point just below deck.

Used crane for man cage to do the cutting.

Pulled guide from shaft -

Broke off at junction with wooden section.

Put guide by Hart house

PM Hauled in steel for panel bases

Took 1 in to hoist from platform started trench

9/18/85 Bill & 2 Men

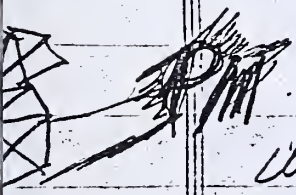
AM - Used back hoe excavated trench
sloped 1/2 foot to north in the 33 feet
filled even for the panels hauled
across west of shaft.

PM - Placed gravel in trench
Hand smoothed
Compacted with roller.
Put timber mat back on platform

Bill & I to Enigma to make detailed
plans.

9/19/85 8:00 - 12:00

AM - Uncovered shaft using back hoe
Found pipe column
Found End plate - west end & center plate
Found East end of shaft
Filled with sand.



Used jack hammer chipped southwest of Enigma
by home pier dam to grade - Trench concrete,
with loader or back hoe brought over dam
to grade. Limited by old turn sheet bore
on north side of shaft. Couldn't get
old lagging out without opening old tunnel that

Went to hant frame;
Pumped old concrete chipped of leg frame
over in shaft area.

Sealed off area with loader - pushed
excess to southwest corner.

Dug trench.

Placed Gravel & compacted. sloped
trench to southwest.

9/20/85 Bill & one man

Unloaded panels 12 - 50 ton crane

Placed panels.

Put fill around edges of panels -
couldn't finish needed more fill.

East end left unfilled 2 panels to go.

9/25/85 8:30 Bill & one man ^{man on line} ~~man~~

Unloaded 2 panels & placed at Emma.

10:00 Unloaded 10 panels at original. Placed
panels as they were unloading.

Pulled shaft cover from floor.

Used 50 Ton Crane

Not good situation working around open
shaft.

PM Unloaded 11 panels (need 2 more) at
Emma, Bruce (Blocked much of shaft).

Cleared area - old concrete fence post base & other debris. Hauled away from project to disposal that Gilman used for the debris from Cobbon street.

Leveled shaft area using loader on backhoe.

9/26/85 Bill, Lamer & Backhoe operator
All Day trencher piled excess material north of area.

Placed gravel in trencher - compacted.
Sloped to West about 6 inches.

10:00 Unloaded three remaining ponds placed
placed rest of ponds - 13 in all

Hauled excess mud to the Emma
Finished off Emma. sloped & trimmed.

9/28/85 Bill & one man
Finished dressing edges of Ponds at
Mary Squire. Finished dressing Emma.

10/5/85 Bill & one man & Crane operator
2 Crane 50 ton to hold guide in
place. Smaller crane for man deck
to weld in guide at top.

weld bottom guide to South end of
head frame. Used old pipe.

Finished filling & compacting around
edges of panels.

